

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. – 13. (Cancelled)

14. (Currently amended) A method of translocating ~~the transporter peptide of claim 1~~ a transporter peptide across the membrane of into a pancreatic B-cells, comprising contacting a pancreatic B-cell with a transporter peptide for a time and under conditions sufficient to allow a transporter peptide to translocate across a membrane of the B-cell, wherein the transporter peptide is selected from the group consisting of SEQ ID NOs: 1–6 comprises the amino acid sequence $X_mRX_oRX_n$, and wherein:

- a) X is a non-basic amino acid;
- b) m is an integer from zero to fourteen;
- c) n is an integer, independent of m, between zero and fourteen; and
- d) o is an integer, independent of m and n, between zero and five.

15. – 35. (Cancelled)

36. (New) The method of claim 14, wherein the transporter peptide comprises the amino acid sequence $X_mRX_oRX_n$ and wherein m is zero, o is zero and n is two (RRXX).

37. (New) The method of claim 14, wherein the transporter peptide comprises the amino acid sequence $X_mRX_oRX_n$ and wherein m is zero, o is two and n is zero (RXXR).

38. (New) The method of claim 14, wherein the transporter peptide comprises the amino acid sequence $X_mRX_oRX_n$ wherein m is one, o is four and n is one (XRXXXXRX).

39. (New) The method of claim 14, wherein the transporter peptide comprises an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3 and SEQ ID NO:6.

40. (New) The method of claim 14, wherein the transporter peptide consists of an amino acid sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3 and SEQ ID NO:6.
41. (New) The method of claim 36, wherein the transporter peptide comprises the amino acid sequence of SEQ ID NO:1.
42. (New) The method of claim 37, wherein the transporter peptide comprises the amino acid sequence of SEQ ID NO:2.
43. (New) The method of claim 36, wherein the transporter peptide comprises the amino acid sequence of SEQ ID NO:3.
44. (New) The method of claim 38, wherein the transporter peptide comprises the amino acid sequence of SEQ ID NO:6.
45. (New) The method of claim 14, wherein the transporter peptide is a retro-inverso peptide.
46. (New) The method of claim 14, wherein the transporter peptide contains one or more modified residues.
47. (New) The method of claim 14, wherein the transporter peptide comprises an amino acid sequence having a length selected from the group consisting of less than fifty amino acids long, less than twenty-five amino acids long and less than fifteen amino acids long.
48. (New) The method of claim 14, wherein the cells are contacted *in vivo*.
49. (New) The method of claim 14, wherein the cells are contacted with a pharmaceutically acceptable salt of the transporter peptide.
50. (New) A method of detecting translocation of a transporter peptide across a membrane of a pancreatic B-cell, comprising:

a) contacting a population of B-cells with a transporter peptide; wherein
the transporter peptide comprises the amino acid sequence $X_mRX_oRX_n$ and

wherein

x is a non-basic amino acid;

m is an integer from zero to fourteen;

n is an integer, independent of m, between zero and fourteen;

o is an integer, independent of m and n, between zero and five;

b) incubating the B-cells and transporter peptide for a time and under conditions
sufficient to enable translocation into the cells; and

c) detecting the presence of transporter peptides inside the B-cells.

51. (New) The method of claim 50, wherein the transporter peptide is detectably labeled.

52. (New) The method of claim 50, wherein the presence of transporter peptides is detected
by incubating said population of B-cells with detectably labeled antibodies to transporter
peptides.

53. (New) The method of claim 50, wherein translocation is detected by observing a
biological response in a host containing said population of B-cells.

54. (New) The method of claim 53, wherein the host is a human being.